Comment on acp-2021-384

Anonymous Referee #2

Referee comment on "Transport-driven aerosol differences above and below the canopy of a mixed deciduous forest" by Alexander A. T. Bui et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-384-RC2, 2021

This manuscript addresses an important topic, even though it cannot be considered particularly original. The paper is relatively well written and organized, and both methods and data interpretation appear scientifically sound. I have a few minor issues to be considered, after which the paper is acceptable for publication.

lines 123-128: I think the authors could sharpen the stated objectives of this paper. The paper presents a few cases that have some scientific, and performed analysis has probably a scientific value by itself. Just providing potentially useful data for future modeling activities is not convincing for a research paper.

The different OA factors, first discussed in section 3.3, should be spelled out in the main text.

lines 568-572: One can see qualitatively from Figure 6 whether certain compounds appear to follow each other directly or inversely. However, plotting time series does not tell anything about correlations without further statistical analysis.

lines 574-575: Diurnal profiles reveal only diurnal patterns and do not tell anything about temporal patterns in some other time scales.

The statement on lines 639-640 is rather strong, especially as many other potential reasons for the apparently strong relation seen in Figure 7 (as discussed separately on

lines 647-660).

line 699: Figure 9 should be Figure 8.

The way the second paragraph in section 4 (lines 720-726) has been written (… has been hypothesized) makes it difficult for a reader to understand whether this paragraph presents general information or results from the current work.

Please check out how to express days of the year and times of the day in the text.